

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
7 July 2005 (07.07.2005)

PCT

(10) International Publication Number
WO 2005/061480 A1

(51) International Patent Classification⁷: **C07D 311/80**

(21) International Application Number:
PCT/GB2004/005394

(22) International Filing Date:
17 December 2004 (17.12.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0329635.7 23 December 2003 (23.12.2003) GB

(71) Applicant (for all designated States except US): **JOHNSON MATTHEY PUBLIC LIMITED COMPANY** [GB/GB]; 2-4 Cockspur Street, Trafalgar Square, London SW1Y 5BQ (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **GEISER, Fiona,**

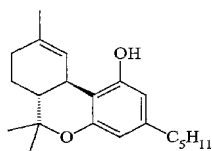
Obrock [US/US]; 1054 Wilson Avenue, Glen Mills, PA 19342 (US). **KEENAN, John, James** [US/US]; 227 Deerwood Drive, Franklinville, NJ 08322 (US). **ROSSI, Ronald** [US/US]; 744 Tomlin Station Road, Mullica Hill, NJ 08062 (US). **SANCHEZ, Albert** [US/US]; 1803 Graywell Road, Wilmington DE 19803-3318 (US). **WHELAN, John, Michael** [US/US]; 410 Gayley Street, Apt C302, Media, PA 19063 (US).

(74) Agent: **CARNEY, Maeve, Mary**; Johnson Matthey Technology Centre, Blounts Court, Sonning Common, Reading RG4 9NH (GB).

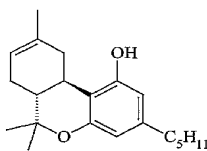
(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,

[Continued on next page]

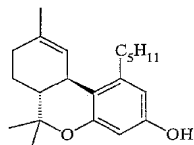
(54) Title: PROCESS FOR PURIFYING (-)- Δ^9 -TRANS-TETRAHYDROCANNABINOL



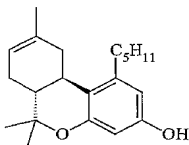
(-)- Δ^9 -trans-THC



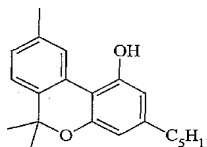
(-)- Δ^8 -trans-THC



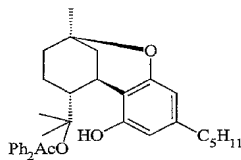
(-)- Δ^9 -abn-THC



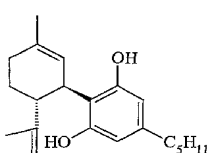
(-)- Δ^8 -abn-THC



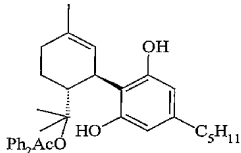
Cannabinol



"DPA-iso"



Cannabidiol



"DPA-triol"

(57) Abstract: A preparative separation process wherein (-)- Δ^9 -trans-tetrahydrocannabinol is separated from a mixture of cannabinoids is disclosed. The process comprises at least one chromatographic step wherein a mobile phase passes through a stationary phase. The stationary phase comprises a derivatised polysaccharide and the mobile phase comprises carbon dioxide.



PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

- (84) **Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.